

1 Navy Case No. 72939

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3 CLOSED BRAYTON CYCLE DIRECT CONTACT REACTOR/STORAGE TANK
4 WITH O₂ AFTERBURNER

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6 ABSTRACT OF THE DISCLOSURE

7 A closed cycle Brayton direct contact reactor/storage tank
8 uses an afterburner to assist in removing metal vapors from the
9 working fluid. The direct contact reactor/storage tank operates
10 by bubbling an inert gas through liquid metal fuel. The inert
11 gas picks up metal vapors from the fuel. The afterburner
12 comprises a predetermined amount of oxygen, O₂, being fed to a
13 filter cavity within the reactor/storage tank and having the
14 metal vapors react directly with the O₂ forming a solid oxide
15 that remains and does not circulate as part of the working fluid
16 throughout the external parts of the Brayton cycle outside of the
17 reactor/storage tank causing damage to system components.